



US006754306B2

(12) **United States Patent**  
**Cho et al.**

(10) **Patent No.:** **US 6,754,306 B2**  
(45) **Date of Patent:** **Jun. 22, 2004**

(54) **PORTABLE MEDICAL DIGITAL  
RADIOGRAPHY ASSEMBLY**

(75) Inventors: **Kenneth Cho**, Honolulu, HI (US);  
**Mark Freckleton**, San Antonio, TX  
(US); **Peter Martin**, Kihei Maui, HI  
(US)

(73) Assignee: **The United States of America as  
represented by the Secretary of the  
Army**, Washington, DC (US)

(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/300,935**

(22) Filed: **Nov. 21, 2002**

(65) **Prior Publication Data**

US 2003/0142788 A1 Jul. 31, 2003

**Related U.S. Application Data**

(60) Provisional application No. 60/331,761, filed on Nov. 21,  
2001.

(51) **Int. Cl.<sup>7</sup>** ..... **H05G 1/24**

(52) **U.S. Cl.** ..... **378/102; 378/189**

(58) **Field of Search** ..... 378/102, 189,  
378/195, 197, 193, 98.8, 206, 208, 19,  
42, 45, 55, 62, 196

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

601,172 A \* 3/1898 Seguy  
4,813,060 A \* 3/1989 Heubeck et al. .... 378/39

4,984,774 A \* 1/1991 Zupancic et al. .... 5/601  
5,086,447 A \* 2/1992 Siczek et al. .... 378/197  
5,521,957 A \* 5/1996 Hansen ..... 378/198  
5,909,478 A 6/1999 Polichar et al.  
6,206,566 B1 \* 3/2001 Schuetz ..... 378/205  
6,256,374 B1 \* 7/2001 Tomasetti et al. .... 378/98.2  
6,315,445 B1 11/2001 Mazess et al.  
6,379,041 B1 4/2002 Schuetz et al.  
6,398,409 B1 6/2002 Brooks

**OTHER PUBLICATIONS**

Trex Enterprises, "PDX 2000: Portable Digital X-Ray Sys-  
tem," printed from www.trexenterprise.com dated Jul. 6,  
2003, pp. 1-2.

\* cited by examiner

*Primary Examiner*—Craig E Church

*Assistant Examiner*—Irakli Kiknadze

(74) *Attorney, Agent, or Firm*—Elizabeth Arwine

(57) **ABSTRACT**

A portable medical digital radiography apparatus includes a ruggedized transport case housing several system components, a digital X-ray image sensor and an X-ray generator. The digital X-ray image sensor is hingedly coupled to a stand that is mounted to the ruggedized transport case. The X-ray generator is preferably positioned opposite to the center of digital X-ray image sensor. A patient support unit is disposed between digital X-ray image sensor and the X-ray generator. An image acquisition unit is connected to the X-ray generator and to the digital X-ray image sensor and fixedly mounted in the ruggedized transport case. An image display unit is connected to the image acquisition unit and spaced from the X-ray generator.

**10 Claims, 4 Drawing Sheets**

